Major Evaluation Assumptions that, if Changed, Could Affect Option Ranks

1. Habitats (physical and flow-related) for covered species can be restored such that:

- **they function as habitat for and would be used by the covered species, and**
- **adverse effects of non-native predators and competitors on covered species can be measurably reduced.[1]**

The degree to which functioning habitat can be restored for some species and that restored habitats can reduce the adverse effects of non-native species on covered fish species is uncertain. If this assumption is incorrect, all of the Options would likely rank the same for green and white sturgeon (see Table 1 below for current rankings). Option rankings would not likely change for the other covered species, however, the magnitude of species benefits provided by Option 4 relative to the other Options and Options 2 and 3 relative to Option 1 would be reduced.

2. Source control of selenium in the San Joaquin River would eliminate selenium discharges from the San Joaquin River into the Delta.[2]

The Options evaluation assumes that source control reduction in the San Joaquin River watershed as mandated by the Regional Board would be successful in reducing selenium loads to levels that would reduce or would not increase exposure of sturgeon and splittail to selenium from existing conditions. If source controls for selenium are not successful, Options 2-4 would likely be ranked the same and lower than Option 1 (see Table 1 below for current rankings). For splittail, Option 1 would likely be ranked higher than Option 2, but lower than Options 3 and 4 (see Table 1 below for current rankings). The magnitude of splittail benefits provided by Options 3 and 4 relative to Option 1, however, would be reduced.

3. Fish screens at the Hood intake facility under Options 3 and 4 would be 95% effective in avoiding entrainment losses of all but the smallest fish, eggs, and larvae.[3]

If fish screens operated with effectiveness substantially lower than 95% (e.g., 60%), rankings of Options 3 and 4 relative to the other Options could change for Sacramento River salmonids and Sacramento splittail if levels of entrainment were substantially higher at the Hood intake facility compared to entrainment levels at the current south Delta intake facilities under base conditions. Otherwise, some increased level of entrainment above base conditions at the Hood intake would

[1] See Table 2-3 in the Options Evaluation, Criterion #3 Assumption #2 and Criterion #5 Assumption #1.

[2] See Table 2-3 in the Options Evaluation, Criterion #2 Assumption #5.

[3] See Table 2-3 in the Options Evalutaion, Criterion #1 Assumption #1.

be unlikely to change Option ranks, although the magnitude of benefits provided to Sacramento River salmonids and splittail under Options 3 and 4 relative to Options 1 and 2 would be reduced. It is likely, however, that the Hood intake facility would be operated to reduce exposure to entrainment during sensitive periods in a manner that would continue to achieve water supply objectives similar to current practices (e.g., VAMP, EWA, etc.).

4. Operating reservoirs in accordance with reservoir operating criteria would not change the performance ranking of the Options.[4]

Upstream reservoir elevations were dictated by in-Delta CALSIM II model parameter values assigned under Scenarios A and B for each Option. In reality, operations under each Option would need to be modified to ensure that regulatory and other operational commitments associated with each reservoir are maintained. Because specific operational requirements of each reservoir were not included in the modeling assumptions, the results for hydrodynamic-related metrics for each species could be different. The Options Evaluation assumes that each Option provides the flexibility to adjust operations such that reservoirs can be managed to meet reservoir operating criteria without compromising the ability to achieve water supply and biological objectives. If this assumption is incorrect, it potentially could change the Options rankings relative to biological and planning criteria.

5. The influence of the "Exposure to Toxics" stressor is accorded a "low importance" weight in the ranking of the Options relative to effects of other species stressors.

The potential effects of each Option on the Exposure to Toxics stressor were considered based on the change in Sacramento River inflows at Rio Vista and total Delta inflows during March and April from base conditions. The results of this evaluation were characterized as of "low importance" in the ranking because of the uncertainties associated with the following assumptions:

- Sacramento River and total Delta inflows can substantively dilute the adverse effects on covered fish species, if any, of toxics present in the Delta; and
- the magnitude of changes in inflows among the Options represent substantive differences in the ability to dilute toxics present in the Delta.

The relationships that may be inferred from these assumptions are highly uncertain, as is the degree to which toxics in the Delta exert measurable adverse effects on covered species. If, in fact, toxics in the Delta are of greater significance for covered species than was assumed and the differences among dilution flows provided by each of the Options are more significant in their ability to affect these stressors, then the ranking of Options could change. These changes could affect Option rankings as follows:

- San Joaquin River salmonids—Options 2 and 3 would likely rank the same (see Table 1 below for current rankings).

[4] See Table 2-3 in the Options Evaluation, Criterion #1 Assumption #3.

- Green and white sturgeon—Options 1and 2 would be ranked the same and higher than Options 3 and 4, and Option 4 would rank higher than Option 3 (see Table 1 below for current rankings).

Table 1. Comparison of Options by Covered Fish Species as Presented in the Options Evaluation

Species	Performance Rank[1]			
	Option 1	Option 2	Option 3	Option 4
Delta smelt	●	●●	●●●	●●●●
Longfin smelt	●	●●	●●●	●●●●
Sacramento River Salmonids	●●●	●●●	●●●	●●●●
San Joaquin River Salmonids	●	●●	●●●	●●●●
White Sturgeon	●	●●●	●●●	●●●●
Green Sturgeon	●●●	●●●	●●●	●●●●
Sacramento splittail	●●	●●	●●●	●●●●

Notes:

1. Based on information presented in Tables H-1 to H-9 addressing Biological Criteria #1-7.

Species performance ranks are:

●●●● = Best performing,
●●● = Second best performing,
●● = Third best performing,
● = Lowest performing

Where ranks are equal the two Options receive same rank